

Cleveland Clinic Heart Center

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Treating the Heart, Blood Vessels and Circulation

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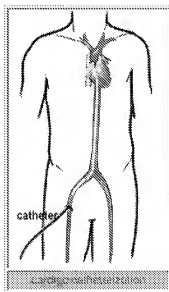
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Coronary Artery Disease Treatment - Non-surgical Procedures (Interventional procedures)

These procedures are performed in the cardiac catheterization laboratory by a specialized cardiologist and a cardiovascular team of nurses and technicians.

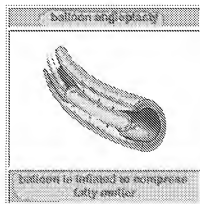
First, a **cardiac catheterization** is performed. After giving medication for relaxation and sedation, the doctor numbs the site with local anesthesia. Next, the doctor inserts a sheath (a thin plastic tube) into an artery usually in your groin. A long, narrow, hollow tube, called a catheter, is passed through the sheath and guided up the blood vessel to the arteries in your heart. A small amount of contrast material is injected through the catheter. The doctor can see the blood vessels, valves, and chambers on a TV screen.

An interventional procedure starts out in the same way as a diagnostic cardiac catheterization. Once the catheter engages the artery with the blockage, the doctor will perform the interventional procedure. The procedure usually lasts about 1 1/2 to 2 1/2 hours, but the preparation and recovery time add several hours. Usually, you will stay overnight and return home the next day.

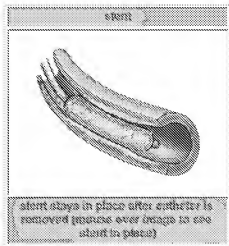


Balloon angioplasty (Percutaneous Transluminal Coronary Angioplasty or PTCA)

A specially designed balloon catheter with a small balloon tip is guided to the point of narrowing in the artery. Once in place, the balloon is inflated to compress the fatty matter into the artery wall and stretch the artery open to increase blood flow to the heart.



Stent

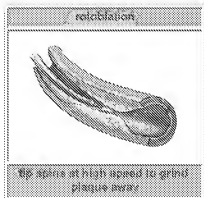


A stent is a small stainless steel mesh tube that acts as a scaffold to provide support inside your coronary artery. A balloon catheter, placed over a guide wire, is used to insert the stent into the narrowed coronary artery. Once in place, the balloon tip is inflated, and the stent expands to the size of the artery and holds it open. The balloon is deflated and removed, and the stent stays in place permanently. Over a several-week period, your artery heals around the stent.

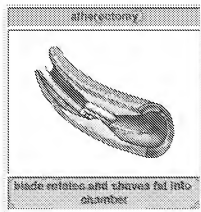
Stents are commonly placed during procedures, such as angioplasty or atherectomy, to help keep the coronary artery open.

Rotablation (Percutaneous Transluminal Rotational Atherectomy or PCRA)

A special catheter, with an acorn-shaped diamond-coated tip, is guided to the point of narrowing in your coronary artery. The tip spins around at a high speed and grinds away the plaque on your artery walls. The microscopic particles are washed safely away in your blood stream and filtered out by your liver and spleen. This process is repeated as needed to allow better blood flow.



Atherectomy (Directional Coronary Atherectomy or DCA)

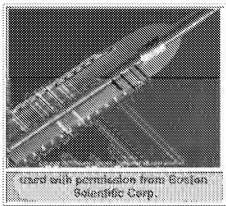


The DCA catheter has a hollow cylinder on the tip with an open window on one side and a balloon on the other. When the catheter is inserted into the narrowed artery, the balloon is inflated, pushing the window against the fatty matter. A blade (cutter) within the cylinder rotates and shaves off any fat, which protruded into the window. The shavings are caught in a chamber within the catheter and removed. This process is repeated as needed to allow better blood flow.

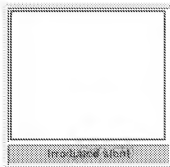
After an interventional procedure, plan on staying in the hospital overnight.

Cutting Balloon

The cutting balloon catheter has a special balloon tip with small blades. When the balloon is inflated, the blades are activated. The small blades score the plaque, then the balloon compresses the fatty matter into the artery wall.



Brachytherapy



Brachytherapy is the use of radiation during angioplasty to prevent the artery from narrowing again. First angioplasty is performed, then a catheter with a "ribbon" of radioactive isotopes is placed through the catheter to the site of the blockage. The ribbon stays in place for about 4 to 15 minutes, and then the catheters are removed. [Click here to learn more](#)

When you return home

- You will need to take it easy for a few days.

Avoid heavy activities. You may climb stairs, but do so at a slower pace. Do not strain for bowel movements.

- Gradually increase your activities until you are at your normal activity level by the end of the week.
- Carry nitroglycerin for the first 6 months.

On the average, about one in four or five blockages return to the treated coronary artery. This is called **restenosis** and usually occurs in the first 6 months. Restenosis is caused by the accumulation of fibrous or scar tissue at the treatment site. Fortunately, it is quite rare for restenosis to cause serious problems, such as a heart attack.

- Call your doctor if you notice a return of symptoms.

If you have angina similar to before your procedure, it may be a sign your coronary artery is re-narrowing or that you have new blockages. Call your doctor as soon as symptoms occur. Symptoms may include chest discomfort, excessive shortness of breath, dizziness, irregular heartbeats, or inability to do normal activities without becoming over-tired.

Chronic Angina Therapy: Enhanced External Counterpulsation (EECP) - for those who are not candidates for interventional therapies

There are a large, increasing number of patients who have persistent anginal symptoms, who have exhausted the standard treatments for revascularization and remain severely restricted. Enhanced External Counterpulsation

(EECP) may stimulate the openings or formation of collaterals (small branches of blood vessels) to create a natural bypass around narrowed or blocked arteries. [Read more...](#)

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- [New Innovations in Interventional Procedures](#)
- [Brachytherapy](#)

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Sources:

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